

Short Biography of David A. Finley for the
Users Executive Committee Election
July 10, 2004

- Education:

1970 B.S. Purdue University
1972 M.S. Purdue University
1972-1974 Active Duty as US Army Officer
1978 Ph.D. Purdue University / Fermilab E357

- Postdoctoral research was devoted to bringing Fermilab E605 from concept to reality in the Meson Lab. One of the fun sub-projects was being part of the group that chopped up the Nevis cyclotron to make both a very, very large magnet and a big magnet. The big magnet is now becoming part of the BTeV experiment for the Tevatron collider program. The very, very big magnet was still in place the last time I looked.

- In 1981, my career continued at Fermilab. The first service work was to lead the group that arranged the Switchyard to go from handling 400 GeV proton beams from the Main Ring to handling 800 GeV beams for the Tevatron fixed target program. Since the overall lengths of the beam lines remained mostly the same, the doubling of the beam energy required truly innovative solutions such as movable splitter septa. I implemented and optimized fast resonant extraction for the Tevatron's neutrino program; this was the first time ever that this technique was used for a superconducting accelerator.

- Service work at Fermilab continued with setting up and leading an operational organization to achieve the first Tevatron proton-antiproton collisions at CDF yielding the initial few events in the Tevatron collider program. I designed the optics for simultaneous operation of two low beta inserts in the Tevatron, and then led the groups that implemented and optimized the optics. Also these groups implemented beam separation using helical orbits for the first time in any accelerator, and this allowed a significant increase in the luminosity by avoiding the head on beam-beam tune shift limit. I determined the theoretical limitations arising from intrabeam scattering for the Tevatron collider and assured they became part of the luminosity planning process at that time.

- Service work at Fermilab also included specific leadership and management roles of various groups and departments. I took care of the day to day activities of the Accelerator / Beams Division while the Main Injector project was being done by others, and during this time both the top quark and tau neutrino were discovered.

- In more recent years, beam R&D activities included a survey of future possibilities including acceleration techniques using plasmas and lasers, providing muon beams intense enough for particle physics, as well as high-energy proton or electron beams using evolutionary paths based on more traditional technologies. This time included leading Linear Collider R&D at Fermilab. The majority of this effort went into forming and then leading a group to take a concept for making multiple XBand accelerating

structures and then actually doing it. One result of this effort was the delivery to SLAC of the first accelerating structure ever to actually simultaneously achieve the NLC specifications for gradient and breakdown rate.

- Recent service in an advisory role to the Director has included chairing two committees. One was composed of collider users and accelerator people charged to advise the Director on practical limitations of the Tevatron luminosity. The other was composed of neutrino users and accelerator people charged to advise the Director on practical possibilities for delivering protons and the needs for protons for the rest of the present decade.

- In December 2002, I joined MiniBooNE as my attention shifted to neutrinos, in all their roles.